Building Consistency Meeting Minutes – 5.4.16

Public Attendance (Contractors, Architects, Engineers): Residential - 11; Commercial - 5

Overview of Today's Agenda

- Today's agenda items: Residential – 7 recap, 7 new; Commercial – 5 recap, 3 new.
- Today's training topic – Daycares & Summer Camps by Jeff Vernon

Welcome, Housekeeping, & Customer Service

- The Greater Charlotte Apartment Association (GCAA) is being added to the contact list for Bldg Consistency and will begin attending the meetings.
- Reminder of deadline established for topic/question submissions to building consistency team:
  - Third Wednesday of every month.
  - Deadline set to allow team time to research/explain code logic behind decisions.
- Mecklenburg County Code Enforcement is abbreviated as MCCE throughout the minutes.
- Training topics for future building consistency meetings
  - June – Historic Properties
  - July – Townhouses
  - Aug – Shell Spaces/TCO/CO
  - Sept – Weathersealing/Blower Door Testing
  - Oct – Cold Weather Concrete Placement (ACI 318)
- Legal ISO class – six modules, two hours each; class is one full-day & one half-day.
  - Joelle Jefcoat, who is a lawyer and architect, is the new vendor instructing the classes.
  - Classes can also count as CE toward any of the five trades (B,E,M,P,Fire).
  - May 12-13
- Building code qualification classes at CPCC
  - July 8 – 10; 22 – 24 – Level I
  - Sep 16 – 18; Oct 1 & 2 – Level II
  - Dec 2 – 4; 16 – 18 – Level I

Residential Consistency (7 review items, 7 new items) – 1hr of Tech ISO

1. Open items or unresolved questions from last meeting:
   a. What are the blocking req'mts at the edges of T-ply?
      - Manufacturer's installation instructions state ALL joints shall occur over solid backing.
      - Patrick Biddy, Plans Examiner, said problems have arisen in the field when T-ply is used on exterior walls behind showers and the shower is installed prior to the blocking.
   b. Are PSL columns allowed to sit on a bottom plate since they typically aren't allowed to have a top plate interrupt the load path?
      - MCCE will allow a single 1-1/2" bottom plate under PSL columns where "end grain bearing is req'd" by design unless the structural design specifically prohibits a plate due to the distribution of the load path.
   c. Is soffit protection required on one-story porch roofs within 10' of the property line & up against a 2-story house if the porch attic doesn't communicate with the attic of the house?
      - Jeff Vernon, Bldg Code Administrator, discussed this with Bill Kirk of NCDOI. Jeff's original position that protection was not req'd is being retracted. Bill Kirk said if the soffit is aluminum or vinyl and within 10' of the property line, then protection is req'd.
   d. What is the criteria for "permanently installed" with regard to a dehumidifier in a closed crawl space under section R409.5.1?

- MCCE is looking for things like a dedicated electrical outlet, permanently piped condensate line, and the dehumidifier to be permanently attached to structure.

e. What is the requirement for soil bearing for grade beams on fill / gravel / virgin soil?
   - The Bldg Consistency Team is still researching this req'mt b/c the typically submitted soil reports state there is no certification for grade beams. The research will address gravel vs virgin soil, the possibility for all foundations & beams to be dug at once, or the possibility of providing two letters. MCCE will give a 60-day warning before implementation of any new policies.
   - Currently, MCCE will allow up to 24" of clean sand or gravel as fill within the stem wall before we require a separate **bearing capacity** letter for the virgin subgrade below the fill. MCCE will also allow up to 8" of earth fill within the stem wall before we require an addt'l **soil compaction** letter.
   - Also currently, MCCE will allow up to 48" of fill under garage & exterior porch slabs before we require a separate **bearing capacity** letter for the virgin subgrade below the fill.

f. What is an example of a code compliant break in the handrail at a winder stair?
   - The Bldg Consistency Team is still researching to find a good photo example.

g. In a U347 assembly, what is the impact of an addt'l layer of 5/8" GWB added to the inside face of the offset wall framing on the performance of the clips to burn away?
   - The Bldg Consistency Team is still researching this item.

2. What are the bracing requirements for pre-built accessory buildings?

   The same bracing req'mts found in the prescriptive NC Residential Code apply to pre-built accessory buildings. There are no exemptions for bracing on pre-built accessory bldgs if their size is such that permits are required, and compliance will be covered under the sealed engr'd design from the bldg manufacturer or 3rd party Eng'r. This topic will be recapped at next month's meeting.

3. What is meant by clarity & legibility of plans?
   a. Plans submitted for plan review & provided in the field for construction need to have clear line work & text that is not distorted. Reproductions of plans are allowed as long as the reproduction process does not distort the printed info.
   b. The size of any text on the plan sheets is req'd to be set so that it is large enough to be legible when the plans are printed out at their full sheet size.

4. What are the req'mts for rods epoxied into the foundation or footing?
   a. The rods must be long enough to embed into the footing/foundation per design and still extend up to allow anchorage of the wall bottom plate.
   b. Placement of the rods during the footing pour has to be accurate so that the rod is correctly lined up with the foundation wall to meet the frame wall plate.

5. What are common issues with improperly installed Braced Wall Panels @ high heeled trusses?
   a. The panels are not blocked and fastened correctly.
   b. The gap at the top of the panel & the roof sheathing exceeds the maximum allowed 2".
   c. The overall panel height at the trusses exceeds the maximum allowed 48".

   The correct req'mts & details can be found in section R602.10.5.5(2) of the NCRC 2012 Amendments OR the IRC 2012, Figure R602.10.8.2(8).

6. What span tables should be used to figure cantilevers for #2 SYP lumber?
    a. At this point, according to Jeff Griffin, Code Enforcement Manager, DOI has not developed a new table for #2 SYP cantilevers. MCCE currently allows three options:
        i. Use the 50 psf snow load numbers in R502.3.3(1).
        ii. Use R502.3.3(1) for one joist size smaller than you are installing; i.e. use spans for 2x8's if you are installing 2x10's.
        iii. Engineered design. Eng'r needs to provide their basis standard for allowing spans outside of the code tables.
    b. Inspector Brian Goins asked what to do when the plans say spruce-fir in the struc design notes but the builder uses #2 SYP. The answer is to go back to the Eng'r for a bulletin letter.

7. What are some issues with AWPA U1 treated wood posts?
    They are treated & labeled as "ground contact", but they are intended for fences & other uses that are not load-bearing. Contractors need to verify the end use labels state they are for load-bearing structures. This topic will be recapped at next month's meeting.

8. Where are CO Detectors required to be installed?
    Per section R315, CO detectors are req'd to be installed outside of each separate sleeping area in the immediate vicinity of the bedroom(s) as directed by the alarm manufacturer. This applies to new construction & existing dwellings where work requiring a permit occurs.

9. Items skipped due to time constraints; these will be revisited next month:
    a. Damaged lugs and L blocks used for hogging and general wall construction.
    b. How should handrails be configured on stairs at angle tread (non-uniform tread depth)?

10. Questions / clarifications / comments from the floor: None.

Commercial Consistency (3 review items, 0 new items) – 1hr of Tech ISO

1. Open items or unresolved questions from last meeting:
    a. Where is the 42" guard height measured from on an exterior walking surface when the guard is mounted on a wide brick ledge around the perimeter?
        - MCCE will allow a brick ledge to project a max of 4" to the inside of the guard and still measure from the walking surface for the guard rail height.

- The allowable height of the brick ledge off the walking surface is not established; this will be researched more for the next consistency meeting. Inspector Jay Garbus suggested using the pool barrier guidelines for climb-ability; Jeff Vernon will consider.

b. Who inspects the installation of work under an Engineering Judgment?
   - The Engineer designing the detail is required to perform site inspections & supervision on his / her design. The form to be completed by the Eng'r of Record is being updated.
   - This inspection process does not require submittal through Meck-SI.

c. What are the common challenges with shaftwalls regarding continuity & constructability?
   - See attached document summarizing the shaftwall presentation by Andy Herring, Code Enforcement Manager for the Mega-Multifamily Team.

2. Items skipped due to time constraints; these will be revisited next month:
   a. Can elevators open directly into a lobby?
   b. What is the process for Special Inspections?
   c. What is the 60% rule for accessible entrances (section 1105)?
   d. What is the req'mt for accessible exits; per space vs. per area (section 1007.1)?

3. Questions / clarifications / comments from the floor: None.

Training Topic – Closed Crawl Spaces – 2hrs of Technical ISO

- Presenter: Jeff Vernon (Meck Co)
- Total attendance from outside MCCE: 4
  - 2 daycare owners
  - 2 DCDEE staff

Definition

Constructability (or **buildability**) is a project management technique to review construction processes from start to finish during the pre-construction phase. It is to identify obstacles before a project is actually built to reduce or prevent errors, delays, and cost overruns.

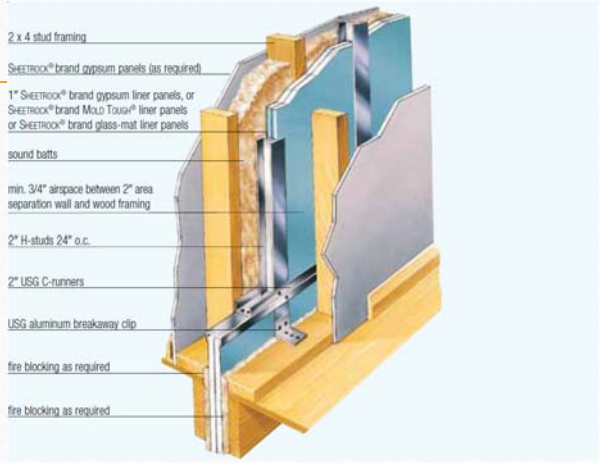
ASW (Area Separation Wall)

VS

Shaft Wall System

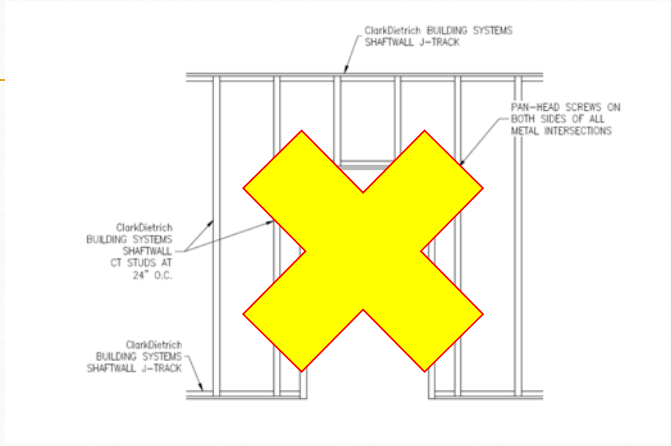
Area Separation Wall (UL 336 & 373)

- Utilizes "H" studs
- Requires Vertical Stability through Aluminum "Breakaway Clips"
- Utilizes 1" Gypsum Liner Panels
- Requires ¾" min clearance to combustibles
- Typically restricted to 66'



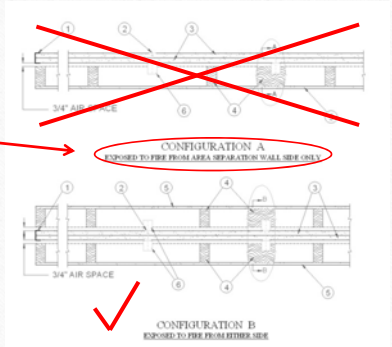
ASW (Continued)

- Has never been Tested for openings!
- These walls have never been tested to NFPA 80
- ASW projects that have been approved prior must have Eng. design on the portal frame.



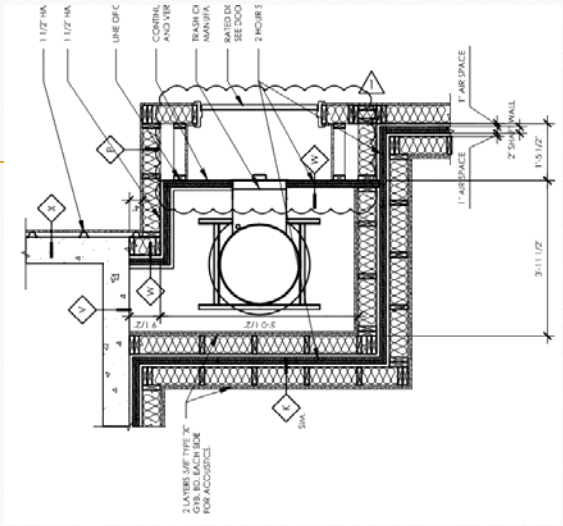
ASW (Continued)

- ASW Walls are protected from both sides when the framed dependent wall is provided.



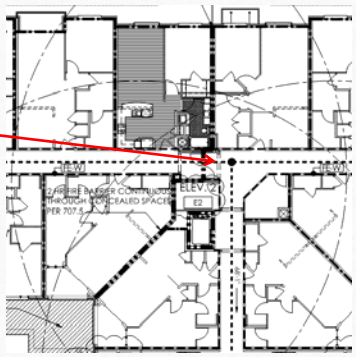
ASW (Continued)

- This is why ASW doesn't work for shafts!



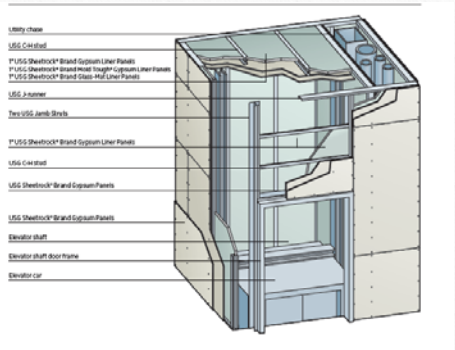
ASW (Continued)

- ASW walls have been used previously as horizontal exits. These cannot be used with the door openings.



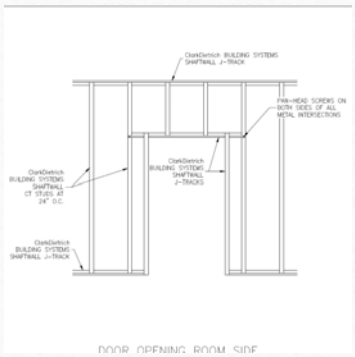
Shaft Wall (UL 415,438,467)

- Shaft wall can be used to achieve 1,2,3,4 hour ratings
- Shaft Wall utilizes a CT or CH metal stud
- Shaft wall can be used in the vertical or horizontal position
- Shaft was intended to provide floor to floor fire ratings
- Utilizes a 1" Gypsum liner panel



Shaft Wall (Continued)

- Shaft wall has been tested for openings
- Shaft wall systems has been tested to meet NFPA 80



Shaft wall (continued)

- Shaft wall allows for the construction of shafts
- This system allows for the finish layers to be inward and to prevent finishing of that layer

Example of Incorrect Construction

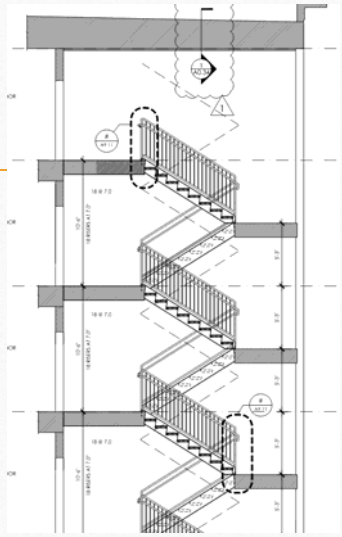
Example of Incorrect Construction

Shafts

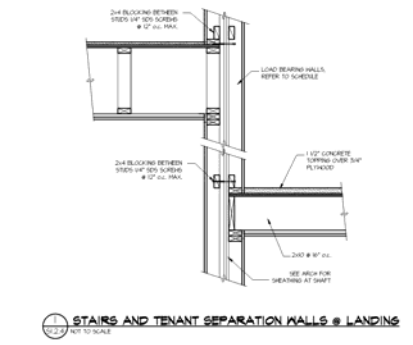
SHAFT. An enclosed space extending through one or more *stories* of a building, connecting vertical openings in successive floors, or floors and roof.

Shaft Enclosures

- Are required to have the walls constructed as Fire Barriers
- These walls must be continuous from Foundation to Roof/Floor above
- The Membrane of these walls should not be interrupted
- The shaft walls cannot set on a lesser rated construction



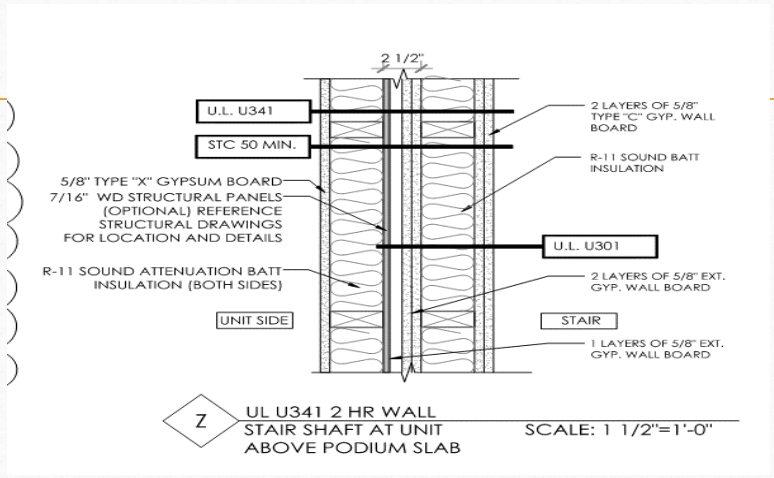
Examples of Incorrect Construction



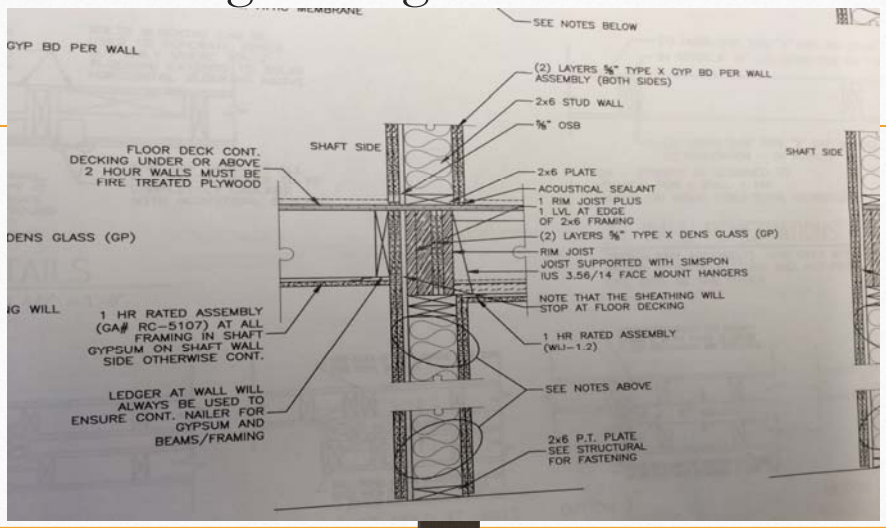
- The landing should not interrupt the wall membrane
- This is truly not constructible because of the timing of construction

Example of Incorrect Fire Barrier

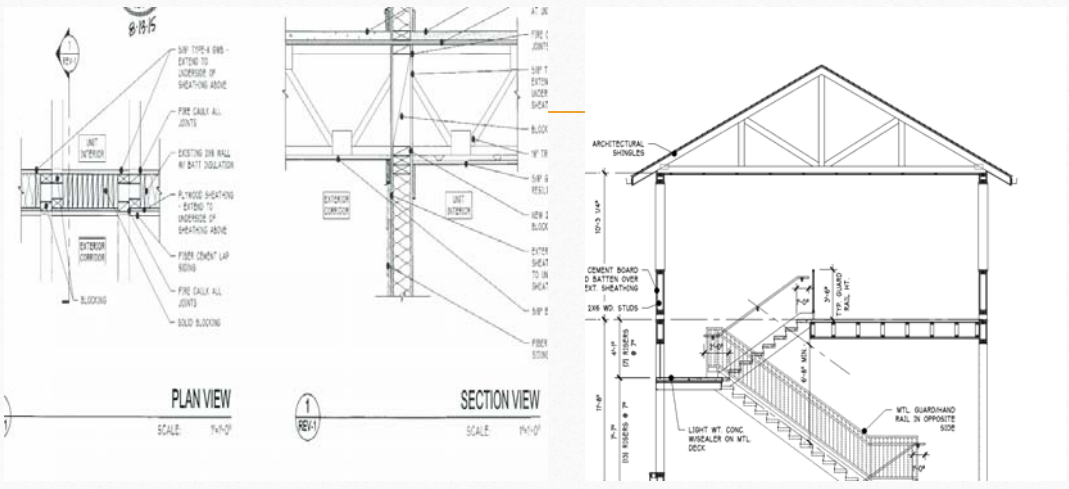
Not Constructible



Tough Design to construct

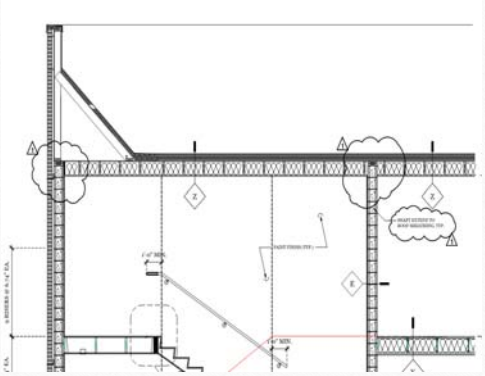


Single Exit Buildings are Shaft Enclosures

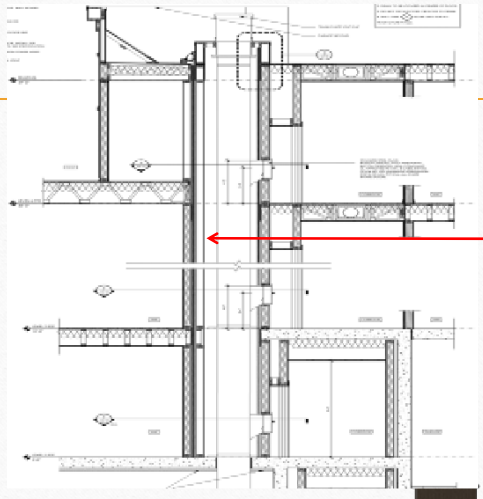


Shaft Enclosures (continued)

- The shaft should continue to the roof deck
- If the Shaft doesn't continue to the roof or deck above, then the shaft has to be independently capped



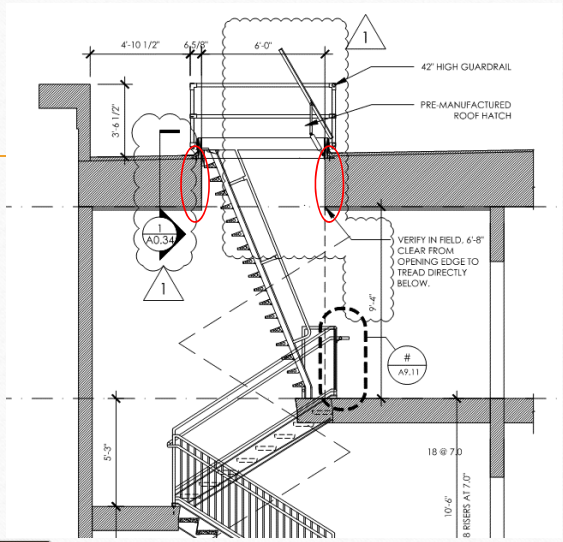
Not Constructible



- Wood framed wall cannot be built and finished

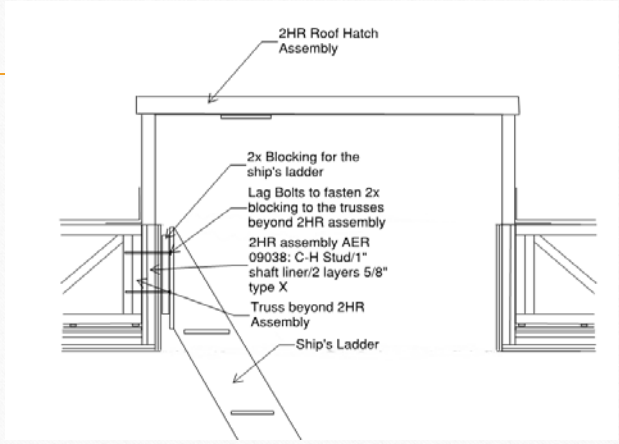
Shaft Enclosure Cap

- Shaft not extended to roof, has a lid and the stair has a required access



Shaft enclosure with access

- This cannot be efficiently constructed
- What is wrong with this?



Refuse/laundry chutes

- Have access and termination rooms that are required to have the surrounding walls constructed as Fire Barriers. The Arch and Structural pages must be compared.